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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/619,814	07/15/2003	Yong Qin Chen	2219	7651

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EXAMINER

PAK, SUNG H

ART UNIT	PAPER NUMBER
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2874

DATE MAILED: 03/08/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/619,814	Applicant(s) CHEN ET AL.	
	Examiner Sung H. Pak	Art Unit 2874	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-15, 17 and 19 is/are rejected.
- 7) ☒ Claim(s) 16 and 18 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claims 1-9, 12-15, 17, 19 are rejected under 35 U.S.C. 102(e) as being anticipated by Shirasaki et al (US 2002/0044364 A1).

Shirasaki discloses an optical device with all the limitations set forth in the claims, including: a collimating means (Fig. 13) for receiving a spatially diverging beam of light which contains a plurality of frequencies as may be emitted from an end of an optical fiber included in an optical communication system (paragraph 0021); the collimating means also converting the received spatially diverging beams of light into a mainly collimated beam of light that is emitted from the collimating means (Fig. 13); an optical phaser which provides an entrance window for receiving the mainly collimated beam of light from the collimating means and for angularly dispersing the received beam of light in a banded pattern that is emitted from the optical phase (paragraph 0021); whereby the received beam of light becomes separated into bands so that light having a particular frequency (or wavelength) within a specific band is angularly displaced from light at other frequencies within that same band (paragraph 0021); a light-returning means (mirror) which receives the angularly dispersed light having the banded pattern that is emitted

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from the optical phaser, and for reflecting that light back through the optical phaser to exit the optical phaser near the entrance window (paragraph 0021); wherein the entrance window of the optical phaser is at least partially transparent to light impinging thereon (Fig. 8); wherein the light-returning means includes a light-focusing means and a mirror disposed near a focal plane of the light-focusing means, the light-focusing means collecting the angularly dispersed light having the banded pattern emitted from the optical phaser for projection onto the mirror, the mirror reflecting light impinging thereon back towards the light-focusing means (paragraph 0022); wherein the light-focusing means projects to a distinct location on the mirror each band in the banded pattern of angularly dispersed light generated by the optical phaser (Fig. 14); wherein the mirror is curved (paragraph 0216); wherein the mirror has multiple curvatures and the curvature of the mirror is adjusted by translating the mirror (paragraph 0220); wherein the optical phaser is made from a plate of material having two parallel surfaces between which light after entering the optical phaser through the entrance window reflects, and with the entrance window being formed on an outer surface of the plate (Fig. 8).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 10-11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shirasaki et al (US 2002/0044364 A1).

Shirasaki discloses an optical device with all the limitations set forth in the claims as discussed above, except it does not teach the use of mechanical force for bending the mirror such that curvature of the mirror is adjusted.

However, the use of micro-electro-mechanical (MEMs) mechanism for bending micro-mirrors so as to change their curvature is well known and commonly used in the optical switching art. Such MEMs devices are advantageous and desirable because they can control the light signal path with high precision and high reliability. Therefore, it would have been obvious to a person of ordinary skill in the art at the time the invention was made to modify the Shirasaki device to have a MEMs mechanism for bending mirrors.

Allowable Subject Matter

Claims 16, 18 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

The following is a statement of reasons for the indication of allowable subject matter: as discussed above, a chromatic dispersion compensator comprising a collimating means and an optical phaser for angularly dispersing the received beam of light in a banded pattern is known in the art. However, none of the prior art fairly teaches or suggests such a compensator, inter alia, wherein the entrance window of a phaser is formed by a prism that projects out of one of the two parallel surface, and wherein one of the transparent surface of the optical phaser diffracts the emitted light at an angle exceeding 45 degrees as claimed in the instant application.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. US 6,481,861 B2, US 2003/0128431 A1, US 5835517 A, US 6008920 A disclose chromatic dispersion compensators and WDM multiplexer/demultiplexers utilizing parallel, partially transparent reflectors.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sung H. Pak whose telephone number is (571) 272-2353. The examiner can normally be reached on Monday- Friday, 9AM-5PM.

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The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Sung H. Pak
Examiner
Art Unit 2874

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